

FY-03-XLVIII-117

“Mercury and Air Toxic Impacts of Coal Combustion Byproduct Disposal and Utilization”

CONTRACTOR: Energy & Environmental Research Center

PRINCIPAL INVESTIGATOR: Debra F. Pflughoeft-Hassett
701-777-5261 (0)
701-777-5181 (fax)
[mail to: dphassett@eerc.und.nodak.edu](mailto:dphassett@eerc.und.nodak.edu)

PARTICIPANTS

<u>Sponsor</u>	<u>Cost Share</u>
Great River Energy	\$37,500
Utility Solid Waste Activities Group	\$75,000
Center for Air Toxic Metals	\$75,000
Energy & Environmental Research Center	\$25,000
Cinergy Corp	\$75,000
EPRI	\$75,000
DOE-NETL	\$1,200,000
NDIC	<u>\$37,500</u>
Total Cost	\$1,600,000

Project Schedule - 36 Months

Contract Date –5/22/03
Start Date –5/22/03
Completion Date –5/30/06
Time Extension – 10/30/06

Project Deliverables

Contract Award √
1st Annual 2004 5/30/04 (√)
Task 3 & DOE funds 11/15/04 (√)
2nd Annual Report 5/30/05 (√)
Task 5 & DOE funds 12/31/05 ()
Final Report – 10/30/06 ()

OBJECTIVE / STATEMENT OF WORK

The goal of the proposed project is to evaluate potential impacts of mercury and other air toxic elements on the management of coal combustion byproducts (CCBs). Supporting objectives are to 1) Determine the potential release of selected air toxic elements such as mercury from CCBs under specific environmental conditions; 2) Increase the existing database on mercury and other air toxic elements with respect to potential release into the environment; 3) Develop appropriate laboratory and field experimental protocols; and 4) Develop comparative laboratory and field data. The study will facilitate the comparison of data from existing and evolving emission control systems and the anticipated results will support continued environmentally responsible management of CCBs and development of guidelines for appropriate utilization and disposal requirements. The study will also facilitate the maintenance of current CCB markets and minimize potential barriers to further utilization of CCBs.

STATUS

Year 1 Annual Report (May, 2003 – May 2004) Project activities focused on: Assembling literature to facilitate sample and methods selection; Identifying and obtaining appropriate CCBs for laboratory evaluations; Continuing the development of methods to evaluate mercury and air toxic releases from CCBs; Determining the release of mercury under different conditions for the three mechanisms.

Year 2 Annual Report (May 2004 – May 2005) By-product field samples include fly ash, FGD material, bottom ash and coal mill rejects. The samples are representative of bituminous, subbituminous and lignite coals. Leaching and other tests are on-going, with a preliminary conclusion that total mercury and leachable mercury have no correlation.